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## PATENT ABSTRACTS OF JAPAN

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### (54) DIOXANE-BASED LIQUID CRYSTAL SUBSTANCE

(57) Abstract:

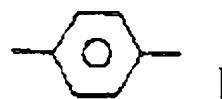
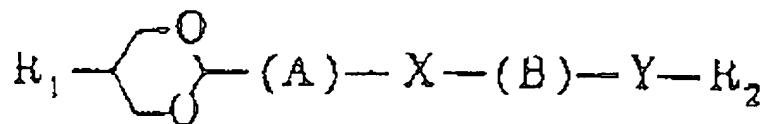
NEW MATERIAL: A dioxane-based liquid crystal substance, expressed by formula I [R1 is 1-20C alkyl, alkoxy, alkyloxycarbonyl or alkylcarbonyloxy; (A) is formula II, III, IV, etc.; X is formula V, VI, etc.; R' is H or methyl; l is 1-6] (B) is formula II, III, etc.; Y is formula V, -O-, -S-, -CH2O-, etc.; R2 is formula VII, etc.; R3 is 1-20C alkyl, aralkyl, etc.; Z is CF3, C2F5, CHF2, etc.; m is 2-20].

EXAMPLE: 4'-(1-Trifluoromethylonyloxycarbonyl)phenyl (R)-(+)-4-(5-n-benzyl- trans-1,3-dioxan-2-yl)benzoate.

USE: Useful as a liquid crystal component in liquid crystal display, optical shutters, etc., and for application to electrooptical elements, etc.

PREPARATION: For example, ethyl malonate is reacted with a sodium alcoholate, etc., to provide a compound expressed by formula VIII, which is used as a raw material and passed through several steps to afford the compound expressed by formula I.

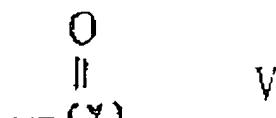
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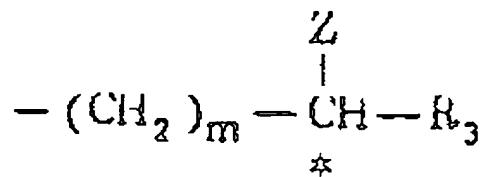
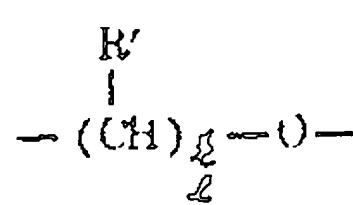
II



III



V



VI

